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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/699,593	10/30/2003	Hiroyuki Seki	FUJO 20.695 (100794-00490)	1897
26304 7590 03/11/2008 KATTEN MUCHIN ROSENMAN LLP 575 MADISON AVENUE NEW YORK, NY 10022-2585			EXAMINER CHEN, JUNPENG	
			ART UNIT 2618	PAPER NUMBER
			MAIL DATE 03/11/2008	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/699,593	SEKI ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	JUNPENG CHEN	2618	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 19 February 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,4-8 and 11-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 4-8 and 11-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

1. This action is in response to applicant's request of Continued Examination (RCE) filed on 02/19/2008 on amendments/arguments filed on 01/18/2008. Claims 1 and 8 have been amended. Claims 2, 3, 9 and 10 have been cancelled. Currently, claims 1, 4-8 and 11-14 are pending.

### ***Claim Objections***

2. **Claims 1, 7, 8 and 14** are objected to because of the following informalities:

- a) On **line 8** of **claim 1**, replace "a" with --the-- after "only";
- b) On **line 3** of **claim 7**, replace "a" with --the-- before "base";
- c) On **line 4** of **claim 7**, replace "a" with --the-- after "with";
- d) On **line 8** of **claim 8**, replace "a" with --the-- after "only";
- e) On **line 11** of **claim 8**, delete "(switch step)" after "antenna";
- f) On **line 4** of **claim 14**, replace "a" with --the-- before "base";
- g) On **line 6** of **claim 14**, replace "a" with --the-- after "of";

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

**Claims 1, 4-8 and 11-14** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Consider **claim 1**, it recites the limitation "selecting an antenna" in line 6 and the limitation "disconnecting the antenna" in line 11, however, Applicant fails to clearly define the relationship between the two "antennas" above, it is unclear if they are the same antenna. Each of **claims 7, 8 and 13** recites similar limitations, therefore, is rejected for the same reason.

**Claim 1** recites the limitation "selected antenna" in lines 8 and 9. There is insufficient antecedent basis for this limitation in the claim. **Claim 8** recites similar limitations, therefore, is rejected for the same reason.

Consider **claim 4**, it recites the limitation "an incoming signal" in line 3 and the limitation "a signal" in line 4 of claim 1, however, Applicant fails to clearly define the relationship between the two "signals" above, it is unclear if they are the same signal. **Claim 11** recites similar limitations, therefore, is rejected for the same reason.

#### ***Claim Rejections - 35 USC § 103***

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

**Claims 1, 4-8 and 11-14** are is rejected under 35 U.S.C. 103(a) as being unpatentable over **Choi** et al. (U.S. Patent 6,754,473 B1) in view of **Greenstein** et al. (U.S. Patent 6,131,016).

Consider **claim 1**, Choi discloses a transmitting diversity system with a base station transmitting signals from a plurality of antennas and performing diversity transmission according to feedback data transmitted from a mobile node receiving the signals (read as the closed loop transmit antenna diversity scheme, line 42 of col. 1 to line 11 of col. 2), comprising:

a signal condition detection unit detecting the condition of a signal transmitted from each of the plurality of antennas (read as the terminal estimator that estimates the channel environment between the base station and the terminal, lines 55-62 of column 3);

an antenna selection unit selecting an antenna for which a control weight is calculated, from the plurality of antennas; and a control weight unit calculating only a control weight applied to the selected antenna and applying the control weight to signals transmitted from the selected antenna (read as the base station maintains a current weight for antenna #1 and assigns a weight changes from a current weight for antenna #2, Figures 1-3, lines 50-55 of column 5); and

a switch unit routing input signals to each of the plurality of antennas and wherein said control weight unit fixes the control weight of an unselected antenna to a current value (read as signal is being routed to both antennas and the weight of the reference antenna is fixed and that of another antenna is varied, lines 50-63 of column 5).

However, Choi does not disclose disconnecting the antenna.

Nonetheless, in related art, Greenstein discloses a similar diversity antenna system, which the processor in the base station operates feedback information to select one transmission processing circuit and deselect or turn off the other transmission processing circuit with selection switches, Figure 2B, line 63 of column 4 to line 7 of column 5.

Therefore, it would have been obvious for a person with ordinary skill in the art at the time the invention was made to incorporate the teachings of Greenstein into the

teachings of Choi for the purpose of performing selection diversity (see lines 63-67 of column 1 of Greenstein).

Consider **claim 4, as applied to claim 1 above**, Choi, as modified by Greenstein, discloses the claimed invention above but does not specifically disclose wherein said signal condition detection unit measures propagation loss, fading frequency or correlation coefficient between antennas of an incoming signal.

Nonetheless, Greenstein further discloses an inherently existing detector that detects the path loss characteristics as fading, Figure 4, lines 45-66 of column 5, lines 8-9 and lines 28-30 of column 6.

Therefore, it would have been obvious for a person with ordinary skill in the art at the time the invention was made to further incorporate the teachings of Greenstein into Choi, which modified by Greenstein, as path loss characteristics is just one of the well known ways that determine the environment condition between the base station and the terminal.

Consider **claim 5, as applied to claim 1 above**, Choi, as modified by Greenstein, discloses wherein said signal condition detection unit is provided for the mobile node (read as the terminal estimates the channel environment, lines 55-62 of column 3).

Consider **claim 6, as applied to claim 1 above**, Choi, as modified by Greenstein, discloses the claimed invention above but does not specifically disclose wherein said signal condition detecting unit is provided for the base station.

Nonetheless, Greenstein further discloses an inherently existing detector that detects the path loss characteristics as fading and the detection (analysis) can be performed in the transmission processing circuitry (base station), Figure 4, lines 45-64 and 66 of column 5.

Therefore, it would have been obvious for a person with ordinary skill in the art at the time the invention was made to further incorporate the teachings of Greenstein into Choi, which modified by Greenstein, as it is just a matter of design choice.

Consider **claim 7, as applied to claim 1 above**, Choi, as modified by Greenstein, discloses the processing circuitry within the base station setting weight to maximize the downlink received power for given transmit power, but does not specifically discloses wherein the plurality of antennas are provided for a plurality of base stations, and said antenna selection unit also selects a base station to communicate with by selecting an antenna with a controlled weight from the plurality of antennas and making possible a handover process accompanying the travel of each mobile node.

However, the Examiner takes Office Notice that it is well-known that during the process of handover, the involving base stations are communicating with each other through antennas, that the processing circuitry within the base station can set weight to maximize the received power for a given transmit power.

Therefore, it would have been obvious for a person with ordinary skill in the art at the time the invention was made to modify the teachings of Choi, which modified by



Greenstein, to set the weight of the selected antenna that communicate with other base station in order to enhance the operation characteristics of the transmission system.

Consider **claim 8**, Choi discloses a transmitting diversity method with a base station transmitting signals from a plurality of antennas and performing diversity transmission according to feedback data transmitted from a mobile node receiving the signals (read as the closed loop transmit antenna diversity scheme, line 42 of col. 1 to line 11 of col. 2), comprising the steps of:

detecting the condition of a signal transmitted from each of the plurality of antennas (read as the terminal estimator that estimates the channel environment between the base station and the terminal, lines 55-62 of column 3);

selecting an antenna for which a control weight is calculated, from the plurality of antennas; and calculating only a control weight applied to the selected antenna and applying the control weight to signals transmitted from the selected antenna (read as the base station maintains a current weight for antenna #1 and assigns a weight changes from a current weight for antenna #2, Figures 1-3, lines 50-55 of column 5); and

routing input signals to each of the plurality of antennas and in the step of calculating and applying the control weight, the control weight of an unselected antenna is fixed to a current value (read as signal is being routed to both antennas and the weight of the reference antenna is fixed and that of another antenna is varied, lines 50-63 of column 5).

However, Choi does not disclose disconnecting the antenna.

Nonetheless, in related art, Greenstein discloses a similar diversity antenna system, which the processor in the base station operates feedback information to select one transmission processing circuit and deselect or turn off the other transmission processing circuit with selection switches, Figure 2B, line 63 of column 4 to line 7 of column 5.

Therefore, it would have been obvious for a person with ordinary skill in the art at the time the invention was made to incorporate the teachings of Greenstein into the teachings of Choi for the purpose of performing selection diversity (see lines 63-67 of column 1 of Greenstein).

Consider **claim 11, as applied to claim 8 above**, Choi, as modified by Greenstein, discloses the claimed invention above but does not specifically disclose wherein in the detecting step, propagation loss, fading frequency or correlation coefficient between antennas of an incoming signal is measured.

Nonetheless, Greenstein further discloses an inherently existing detector that detects the path loss characteristics as fading, Figure 4, lines 45-66 of column 5, lines 8-9 and lines 28-30 of column 6.

Therefore, it would have been obvious for a person with ordinary skill in the art at the time the invention was made to further incorporate the teachings of Greenstein into Choi, which modified by Greenstein, as path loss characteristics is just one of the well known ways that determine the environment condition between the base station and the terminal.

Consider **claim 12, as applied to claim 8 above**, Choi, as modified by Greenstein, discloses wherein the detecting step is performed in the mobile node (read as the terminal estimates the channel environment, lines 55-62 of column 3).

Consider **claim 13, as applied to claim 8 above**, Choi, as modified by Greenstein, discloses the claimed invention above but does not specifically discloses wherein the detecting step is performed in the base station.

Nonetheless, Greenstein further discloses an inherently existing detector that detects the path loss characteristics as fading and the detection (analysis) can be performed in the transmission processing circuitry (base station), Figure 4, lines 45-64 and 66 of column 5.

Therefore, it would have been obvious for a person with ordinary skill in the art at the time the invention was made to further incorporate the teachings of Greenstein into Choi, which modified by Greenstein, as it is just a matter of design choice.

Consider **claim 14, as applied to claim 8 above**, Choi, as modified by Greenstein, discloses the processing circuitry within the base station setting weight to maximize the downlink received power for given transmit power, but does not specifically discloses wherein the plurality of antennas are provided for a plurality of base stations, and said antenna selection unit also selects a base station to communicate with by selecting an antenna with a controlled weight from the plurality of antennas and making possible a handover process accompanying the travel of each mobile node.

However, the Examiner takes Office Notice that it is well-known that during the process of handover, the involving base stations are communicating with each other through antennas, that the processing circuitry within the base station can set weight to maximize the received power for a given transmit power.

Therefore, it would have been obvious for a person with ordinary skill in the art at the time the invention was made to modify the teachings of Choi, which modified by Greenstein, to set the weight of the selected antenna that communicate with other base station in order to enhance the operation characteristics of the transmission system.

### ***Conclusion***

7. Any response to this Office Action should be **faxed to (571) 273-8300 or mailed to:**

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P.O. Box 1450  
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**Hand-delivered responses** should be brought to

Customer Service Window  
Randolph Building  
401 Dulany Street  
Alexandria, VA 22314

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Junpeng Chen whose telephone number is (571) 270-

Art Unit: 2618

1112. The examiner can normally be reached on Monday - Thursday, 8:00 a.m. - 5:00 p.m., EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Urban can be reached on (571) 272-7899. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Junpeng Chen  
J.C./jc

/Edward Urban/

Supervisory Patent Examiner, Art Unit 2618